

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 23 JUN 2004

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| Applicant's or agent's file reference TP101868/SAV | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) | |
| International application No. PCT/FI 03/00183 | International filing date (day/month/year) 11.03.2003 | Priority date (day/month/year) 14.03.2002 |
| International Patent Classification (IPC) or both national classification and IPC D21H23/50 | | |
| Applicant METSO PAPER, INC. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
 - ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

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| Date of submission of the demand 10.10.2003 | Date of completion of this report 22.06.2004 |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized Officer Nestby, K Telephone No. +49 89 2399-8625  |

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/FI 03/00183**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-4 as originally filed

Claims, Numbers

1-3 filed with telefax on 02.03.2004

Drawings, Sheets

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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International application No. **PCT/FI 03/00183**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|-----|
| Novelty (N) | Yes: Claims | 1-3 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-3 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-3 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. The subject matter of claim 1 is understood to be a so-called apparatus claim (thus not a process claim) describing a grounding electrode making part of a device suitable for applying charged particles on to a web in order to form a coat on the first side of the web.
- 1.1 In order to make the scope of the claim clear in accordance with the requirements of Art. 6 PCT the initial part should be redrafted, e. g. as follows:

A grounding electrode (2) suitable for use in a process ...

2. Methods and devices of the aforementioned type comprising rotating grounding rolls are described in the following documents:

D1 : WO-A-00/03092
D2 : GB-A-1 017 576
D3 : FR-A-1 312 830
D4 : US-A-3 248 253
D5 : DE-A-198 36 022

The subject matter of claims 1, 2 differs from said prior art in that the grounding roll has an electrically insulating surface (original disclosure see page 2, lines 34-36). Besides, the feature "charging unit comprising a corona charging electrode" (see original claim 4) in claim 2 is a further distinguishing feature.

The subject matter of claims 1-3 is therefore novel (Article 33(2) PCT).

3. The effect of the distinguishing feature(s) is to enhance the electrical field (see page 2, lines 34-36) so that electrical breakdowns (causing formation of uneven coating layers) when using a corona charging electrode are prevented.
The invention as claimed would hence appear to involve an inventive step (Article 33(3) PCT) since there is no teaching or hint in the prior art leading to the advantages of the invention.

Claims:

1. A grounding electrode of a process in which a web (W) having a first side and a second side is arranged to serve as a substrate, and a powdery layer is arranged to be formed by using a corona charging electrode on the first side of the web by applying electrically charged particles on the web while the grounding electrode is arranged to be located at the second side of the web, the grounding electrode being an electrically conductive rotating roll, characterized in that the electrically conductive grounding roll has an electrically insulating surface.

2. A method for forming a powdery layer from powdery particles on a surface of a continuous web (W) comprising steps of:

- allowing the web having a first side and a second side to move between at least one charging unit of the powdery particles comprising a corona charging electrode at the first side of the web, and at least one electrically conductive rotating grounding roll at the second side of the web being in a ground potential or another predetermined potential,
- applying on the first side of the web powdery particles, which are electrically charged in the charging unit, and
- finishing the powdery layer,

characterized in that the electrically conductive rotating grounding roll has an electrically insulating surface.

3. The method according to claim 2, characterized in that the charging unit comprises means for charging powdery particles by tribocharging.

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